

## QuickDirect - Payload Control Software Template Package, Phase I

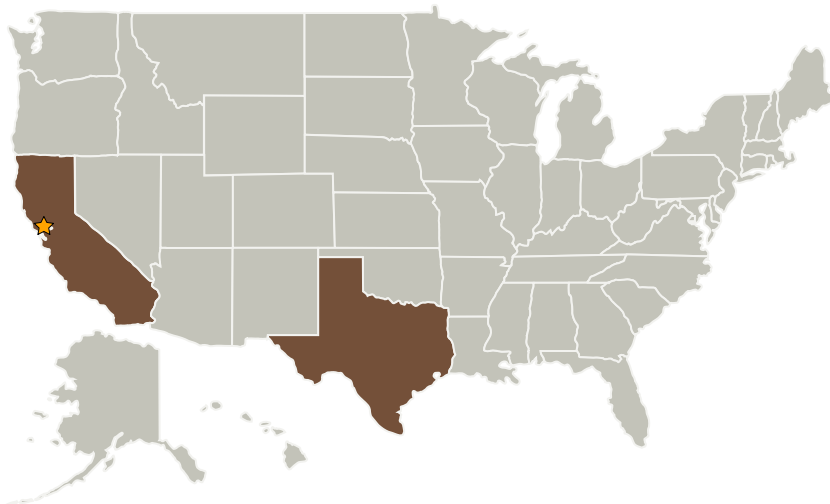
Completed Technology Project (2009 - 2009)



## Project Introduction

To address the need to quickly, cost-effectively and reliably develop software to control science instruments deployed on spacecraft, QuickFlex proposes to create a payload control (QuickDirect) software package that can be used by instrument developers as a template for specific missions. QuickDirect will address the generic needs of science instrument control and will provide a template for the control of mission specific detectors and mechanisms. It will contain modules for command & telemetry handling, engineering data collection and monitoring, memory upload and downloads, and software and hardware watch dog maintenance. QuickDirect will contain common command and telemetry interfaces (serial, UART, Mil-Std-1553-B) as well examples of mechanism and detector control modules. QuickDirect provides a template for the development of the specific instrument control software, freeing the QuickDirect user to focus on the interfaces and specialized processes that are specific to the detectors and mechanism, knowing that the generic payload control requirements are fully and effectively covered. While the software package is designed to operate on a processor platform dedicated to operation of the instrument, the software itself is not tied to any specific operating system or platform. Notably, QuickDirect will leverage the QuickFlex Reconfigurable Logic Manager (RLM), a set of proven software that enables simple and effective exploitation of the full range of capabilities offered by field programmable gate array (FPGA) devices, including partial dynamic reconfiguration. The QuickDirect software package will be thoroughly reviewed, tested and documented.

## Primary U.S. Work Locations and Key Partners



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## Organizational Responsibility

### Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

### Lead Center / Facility:

Ames Research Center (ARC)

### Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★ Ames Research Center(ARC)	Lead Organization	NASA Center	Moffett Field, California
QuickFlex, Inc.	Supporting Organization	Industry	San Antonio, Texas

## Primary U.S. Work Locations

California	Texas
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## Project Management

**Program Director:**

Jason L Kessler

**Program Manager:**

Carlos Torrez

## Technology Areas

**Primary:**

- TX11 Software, Modeling, Simulation, and Information Processing
  - └ TX11.1 Software Development, Engineering, and Integrity
  - └ TX11.1.5 Architecture and Design of Software systems